

REMARKS

Claims 1-31 are pending in the application. By the present amendment, claims 1, 12, 14, and 22 have been amended, and claim 4 has been canceled without prejudice. Applicants respectfully request reconsideration of the claim rejections based on the above amendments and the following remarks.

Allowable Subject Matter:

Applicants gratefully acknowledge Examiner's indication that claims 23-25, 30, and 31 are allowed and that claims 12 and 22 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and that claims 23-25, 30, and 31 are allowed.

claims 12 and 22 have been amended as essentially recommended by the Examiner. Accordingly, claims 12 and 22 are believed to be in condition for allowance.

Claim Objections:

Claims 3 and 4 have been objected to because claims 3 and 4 are the same and both depend from claim 1. Claim 4 has been canceled without prejudice. Accordingly, withdrawal of the claim objections is respectfully requested.

Claim Rejections- 35 U.S.C. § 103(a)

Claims 1-11, 13-21 and 26-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey (U.S. Patent 5,409,563) in view of Muller et al. (U.S. Patent 5,605,600).

It is respectfully submitted that at the very minimum the combination of Cathey and Muller is legally deficient to establish a prima facie case of obviousness under 35 U.S.C. §103(a) to support the rejection of claims 1 and 14 because the combination does not teach or suggest,

e.g., *etching deep trenches in a silicon substrate...wherein the deep trenches have a depth of greater than 8um and a diameter of 175nm or less*, as essentially claimed in claims 1 and 14.

The Examiner has correctly noted that Cathey does not disclose trenches having a depth of greater than 8 um and that Muller discloses a trench having a depth of 8 um with a diameter ranging from 0.3 to 0.5 um.

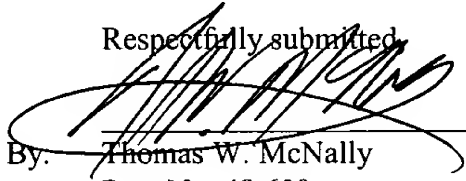
Further, Examiner contends, on page 3 of the Office Action, that because Muller discloses a width for a trench capacitor requires openings of approximately 0.3-0.5um and Cathey discloses trenches having aspect ratios ranging from 5:1 and 40:1, multiplying the widths disclosed in Muller with the aspect ratios disclosed in Cathey results in a trench having a depth greater than 8 um.

However, even assuming the Examiner's proposed combination of Cathey and Muller is legally proper, the combination of a Cathey and Muller fails to disclose a trench having a width of 175 nm, 0.175 um, or less with a depth greater than 8 um. Indeed, even if Cathey or Muller did disclose a trench having a width of 175 nm, the fact that Cathey discloses trenches having aspect ratios of 5:1 and 40:1 renders it impossible to form a trench having a width of 175 nm any deeper than 7um. Thus, the combination of Cathey and Muller fails to suggest or disclose *deep trenches have a depth of greater than 8um and a width of 175 nm or less*.

Therefore, since neither Cathey nor Muller, singularly or in combination, suggest or disclose the features of claims 1 and 14, claims 1 and 14 are believed to be patentable and non-obvious over the combination of Cathey and Muller. Further, all pending claims that depend from claims 1 and 14 are believed to be non-obvious and patentable over such combination for at least the reasons given above for respective base claims 1 and 14.

Accordingly, the withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

In view of the foregoing amendments and remarks, it is respectfully submitted that all the claims now pending in the application are in condition for allowance. Early and favorable reconsideration of the case is respectfully requested.

Respectfully submitted,

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